

COPROPHILUS CASTORIS, A NEW SPECIES OF
STAPHYLINIDAE (COLEOPTERA) FROM BEAVER¹ LODGES
IN EASTERN CANADA

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ABSTRACT

Coprophilus castoris new species, is described from Quebec, and New Brunswick, Canada, and New York state. Adults of the new species are compared with those of the Palearctic species *Coprophilus striatulus* (Fabricius) and a key is presented for identification of the two North American species of the genus and *C. striatulus*. The latter species is removed from the list of species known from North America.

In 1967, while collecting staphylinids from inside beaver lodges, I found one female of a species which I tentatively identified as *Coprophilus striatulus* (Fabricius). Recently, Mr. Richard Sexton submitted a large number of staphylinids from beaver lodges for identification, including two additional specimens of this striking species. Also, Mr. Anthony Davies collected an additional specimen from southern New Brunswick by evening sweeping.

A comparison of these specimens with specimens of *C. striatulus* from Europe indicated that the specimens from beaver lodges were, in fact, a distinct species. This was confirmed by examination of the male genitalia. On the basis of this discovery and on examination of the specimens on which the only published record of *C. striatulus* from North America was based (Fauvel 1878) the following new species is described and *C. striatulus* is removed from the list of North American species.

Adults of the genus *Coprophilus* may be readily recognized by the characteristic habitus of the genus (Fig. 1) or by using the key and excellent revision of Herman (1970).

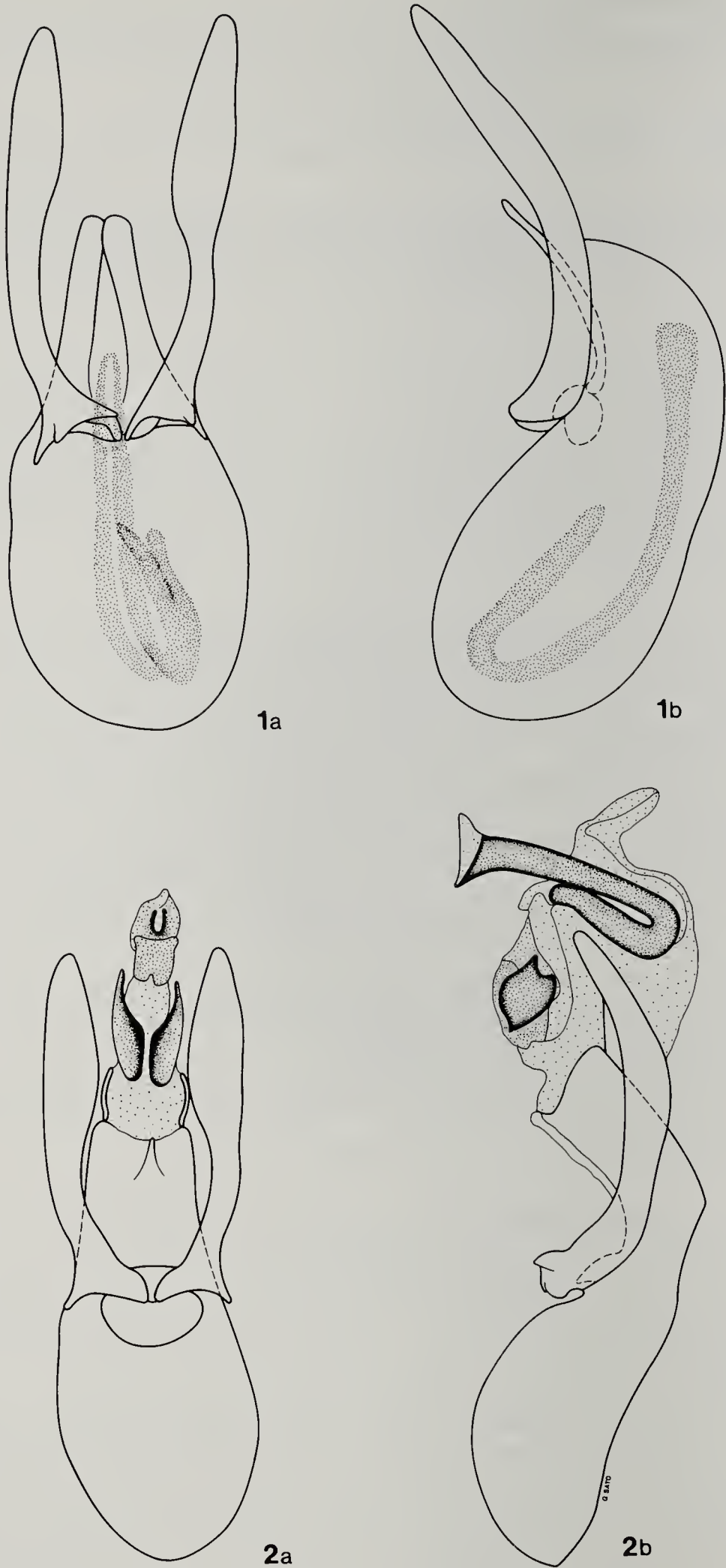
Coprophilus castoris Campbell, new species

Figs. 1-3

Moderately narrowly elongate; dark brunneous to piceous, mouthparts, legs, elytra brunneotestaceous to brunneous; surface shining, sparsely punctate. Length 5.1-6.8 mm; width 1.6-1.8 mm.

Head quadrate (across eyes), distinctly narrower than pronotum (ratio 1:1.2 to 1.3), surface with pair of moderately deep, oval impressions between antennal insertions, faint transverse impression between posterior margin of eyes; surface densely, coarsely, rugosely punctate on underside and on temple behind eye, becoming more sparsely punctate on vertex and very sparsely, irregularly punctate on frons; punctures on vertex separated by distance approximately equal to or slightly greater than diameter of puncture; eyes glabrous, strongly convex and prominent, ranging from slightly shorter than to equal in length to temples; temples straight, slightly converging posteriad; glabrous dorsally except for three short setae along inner

¹ *Castor canadensis* Kuhl.



Figs. 1-2, Aedeagus of *Coprophilus castoris*; 1, internal sac inverted; 2, internal sac everted; a, ventral view; b, lateral view.

margin of each eye and one seta on each side of clypeus; gular sutures slightly divergent basally. Antenna with basal six segments lacking short, dense, recumbent pubescence; ratio of lengths of segment 1-11 as follows: 2.2: 1.0: 1.5: 1.2: 1.0: 0.9:-1.1: 1.2: 1.2: 1.3: 2.1; segments 7-10 slightly transverse, width of segment 6 1.3 times and of segment 10 1.1 times length. Maxillary palpus with basal segment very short, ratio of lengths of segments 2-4 as follows: 1.2: 1.0: 1.7. Mentum and submentum moderately densely, evenly punctate.

Pronotum 1.2 times wider than long, 0.9 times as wide as elytra at base; surface with impressions as follows: midline with narrow, short impression medially, a large, oval, moderately deep impression on each side of midline near base, a small shallow, circular impression at middle near each lateral margin, and a small impression on each basal angle; disc irregularly punctate, densely, almost contiguously punctate in impressions, impunctate along midline in basal fourth, elsewhere punctures separated by distance 2 to 3 times as great as their diameter; widest at anterior fourth, sides broadly rounded to apex, straight or slightly sinuate, strongly converging to base; lateral margins slightly crenulate; basal and apical margins with a row of short, evenly spaced setae; surface smooth, without microsculpture or rugosity, with a few short, scattered setae near margins. Prohypomeron sparsely, coarsely punctate with most punctures near inner margin. Prosternum rugose, not medially carinate.

Scutellum coarsely, moderately densely punctate. Elytra moderately elongate, approximately 1.7 times longer (from base) than pronotum; sides straight, gradually diverging from base to broadly rounded apical angles; surface with six rows of punctures in impressed striae, deflexed sides before epipleural ridge with an irregular row of punctures; apical portion of elytra lacking impressed striae, surface slightly rugose; elytral epipleuron finely, sparsely punctate.

Mesosternum with surface densely, coarsely granulate, opaque. Metasternum with surface smooth, shining, sparsely punctate except sides finely rugose and more densely punctate. Metepisternum with surface finely rugose, moderately coarsely, sparsely punctate.

Abdomen with segments 3-6 becoming gradually wider approaching apex; tergites finely reticulate, with only scattered punctures; inner laterosclerites impunctate, outer laterosclerites moderately densely, irregularly punctate, finely pubescent; sternites with surface finely reticulate, with sparse, fine scattered punctures, punctures and reticulation becoming coarser and denser on sides, sides of sternite 3 densely punctate and coarsely reticulate with distinct fine pubescence.

Male. Metacoxa with small tubercle on outer margin near apex; metatrochanters simple. Apical margin of tergite 8 broadly, evenly concave. Apical margin of sternite 8 shallowly concave medially. Median sclerite of ninth sternum with basal margin shallowly emarginate. Aedeagus (Fig. 1) 1.1 mm long; parameres moderately long and broad, spatulate, with apex narrowly rounded; median lobe extending to near middle of parameres, venter distinctly carinate along midline in apical half; internal sac distinctive, heavily sclerotized; details of evaginated internal sac as in Fig. 2.

Female. Metacoxa without lateral tubercle. Apical margin of sternite 8 strongly convex or almost angulate medially.

Types. Holotype, male, with labels as follows: hutte à castor/LAC FORTUNE, PARC GATINEAU, Qué. 6.IX.1976. R. Sexton, Touraine, Que./HOLOTYPE [male] *Coprophilus castoris* desig. 1978. J. M. Campbell, CNC No. 15594.

Allotype, female with labels as follows: QUE., 1 mi. SW Meach Lake, Gatineau Pk., 9.XI.1967, J. M. Campbell/Berlese sample ex lining of deserted beaver lodge/ALLOTYPE female *Coprophilus castoris* design. 1978. J. M. Campbell, CNC No. 15594. Both holotype and allotype are in the Canadian National Collection, Ottawa.

Paratypes 7, in the American Museum of Natural History, New York, the Canadian National Collection, Ottawa, the private collection of Mr. Richard Sexton, Tour-

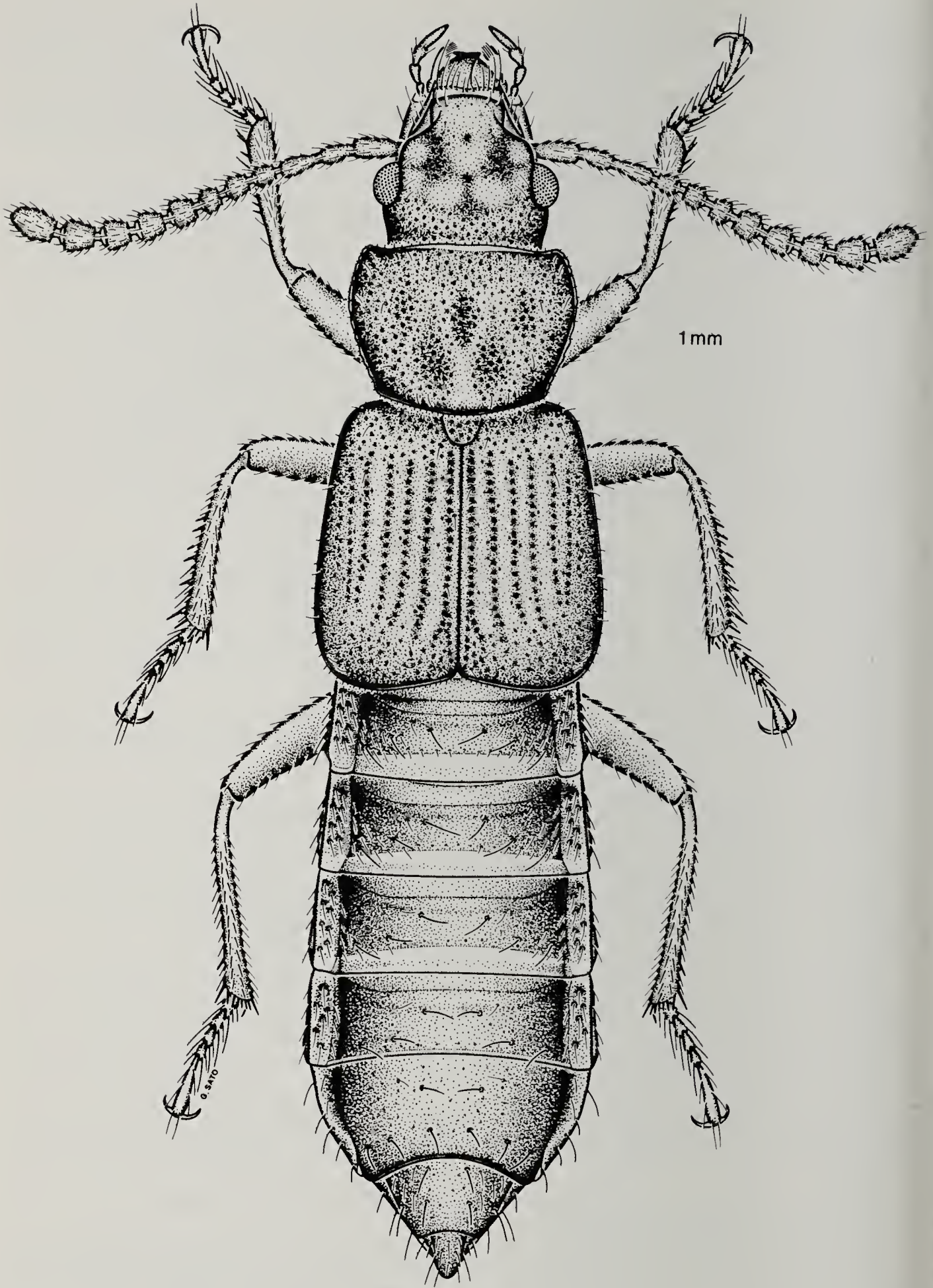


Fig. 3, Habitus of *Coprophilus castoris*.

aine, Quebec, and the collection of the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Distribution and Records. *Coprophilus castoris* is known from New Brunswick and southwestern Quebec, Canada and New York state. Specimens have been collected in March, May, September and November.

CANADA: Country label only, LeConte Coll. (MCZ) 1; Country label only, Horn Coll. (MCZ) 1. *New Brunswick*: St. Andrews, Gibson Lake Area, 13 May, 1978. A. Davies (CNC) 1. *Quebec*: Lac Fortune, Parc Gatineau, 6 September 1976, R. Sexton (CNC, RSC) 2; 1 mi SW Meach Lake, Gatineau Park, 9 November 1967, J. M. Campbell (CNC) 1; Montreal, 9 May, Liebeck Coll., H. C. Fall Collection (MCZ) 2.

UNITED STATES: *New York*: Ithaca, 23 March 1966, M. A. Deyrup (AMNH) 1.

Remarks. Adults of *Coprophilus castoris* are similar to those of the Palearctic species *C. striatulus* (Fabricius). Specimens of *C. striatulus* may be easily distinguished by having the transverse groove across the head at the level of the posterior margin of the eyes deeper and much more distinct, the frons along the anterior margin of the groove raised and impunctate, the eyes very finely pubescent, the median impression of the pronotum longer and deeper extending forward almost to the anterior margin, the side margins of the pronotum more coarsely and distinctly crenulate, the posterior portion of the elytra much more coarsely and distinctly rugose, the elytral epipleura moderately coarsely, densely punctate, and by having the abdominal sternites coarsely and densely punctate throughout.

The only other species of this genus known² from North America is *C. sexualis* Leech. Adults of this species differ from those of *castoris* by the smaller size (length less than 5.0 mm), the complete lack of a transverse impression between the posterior margins of the eyes, the more elongate pronotum (1.1 times wider than long), which ranges from slightly narrower than to equal in width to head, and by the highly modified male posterior trochanter (see Leech 1939 for illustration).

Fauvel (1878) reported the occurrence of *C. striatulus* from North America. He did not examine any specimens of the species but based his record on the presence of one example from Canada in the LeConte collection. I have examined this specimen (a male) and find it identical to the specimens collected from beaver lodges and definitely not conspecific with specimens of *C. striatulus* from Europe. All subsequent references to the occurrence of *C. striatulus* in North America are based on the Fauvel record.

The three specimens of *C. castoris* collected in Gatineau Park were collected by either sifting or immersing the contents of beaver lodges in water. This habitat has been intensively collected in the Gatineau area of Quebec by myself and Mr. Sexton and, to date, only three individuals of the species have been collected. The rarity of this species in this habitat probably indicates that it is not restricted to beaver lodges but only incidentally occurs there.

The following key to the North American *Coprophilus* includes the Palearctic species *C. striatulus* even though it is not known to occur in North America. It is included only because it has been recorded from North America in the literature.

² *Coprophilus vandykei* Hatch was removed from the subfamily Oxytelinae to the genus *Vicelva* (Phloeocharinae) by Moore (1974).

KEY TO NORTH AMERICAN SPECIES OF *Coprophilus*

1. Length less than 5.0 mm; head without trace of transverse groove between posterior margins of eyes; head nearly as wide as or wider than pronotum; male metatrochanter greatly elongate; known from southern British Columbia *C. sexualis* Leech
- 1'. Length greater than 5.1 mm; head with faint or distinct transverse impression between posterior margins of eyes; head distinctly narrower than pronotum; male metatrochanter not modified..... 2
- 2(1'). Apical portion of elytra coarsely rugose; elytral epipleura moderately coarsely, densely punctate; abdominal sternites densely, coarsely punctate throughout; median impression of pronotum extending almost to anterior margin; Palearctic species [*C. striatulus* (Fabricius)]
- 2'. Apical portion of elytra slightly rugose; elytral epipleura finely, sparsely punctate; abdominal sternites finely sparsely punctate medially, punctures becoming denser and coarser laterally; median impression of pronotum extending anteriorly to apical fourth; known only from southern Quebec, New Brunswick, and New York state *C. castoris* n. sp.

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REFERENCES CITED

- FAUVEL, A. 1878. Les staphylinides de l'Amérique du Nord. *Bull. Soc. Linn. Normandie*, Sér. 3, 2:167-266.
- HERMAN, L. H., JR. 1970. Phylogeny and reclassification of the genera of the rove-beetle subfamily Oxytelinae of the world (Coleoptera, Staphylinidae). *Bull. Amer. Mus. Nat. Hist.* 142:343-454.
- LEECH, H. B. 1939. Three new species of Nearctic rove beetles from the Pacific Coast (Coleoptera: Staphylinidae). *Can. Ent.* 71:258-261.
- MOORE, I. 1974. Notes on *Vicelva* Moore and Legner with new synonymy (Coleoptera: Staphylinidae). *Coleopt. Bull.* 28:214.

